ENERGY POLICY UPDATE

APRIL 15, 2014

The Energy Policy Update Electronic Newsletter is published by the Arizona Governor's Office Of Energy Policy and is provided free of charge to the public. It contains verbatim excerpts from international, domestic energy, and environment-related publications that are reviewed by Community Outreach Personnel. For inquiries, call 602-771-1143 or toll free to 800-352-5499. To register to receive this newsletter electronically or to unsubscribe, email Gloria Castro.

UPCOMING WEBINARS

LED Color Stability: 10 Important Questions
Tuesday, April 15, 10:00 a.m. - 11:00 a.m. MST
Register to attend the webinar.
Webinar Sponsor: EERE's Solid-State Lighting Program

Recent Wind Energy Technology Advances
Wednesday, April 16, 12:00 p.m. MST
Learn how to join the webinar.
Webinar Sponsor: Wind Program Stakeholder Engagement & Outreach Initiative

Technology Incubator for Wind Energy Innovations
Thursday, April 17, 12:00 p.m. - 2:00 p.m. MST
Register to attend the webinar.
Webinar Sponsor: EERE's Wind Program

Advanced Energy Retrofit Guide For Healthcare Facilities
Thursday, April 17, 10:00 a.m. - 11:30 a.m. MST
Register to attend the webinar.
Webinar Sponsor: EERE's Building Technologies Office

Fuel Cells at NASCAR
Thursday, April 17, 9:00 a.m. -

CONTENTS

The Arizona Republic now has limited access. As such, links may or may not work.

ARIZONA-RELATED

Brewer Signs Budget, Uses Veto to Slice out Items

Arizona Gov. Jan Brewer has signed the $9.2 billion fiscal 2015 budget, but she wielded her line-item veto power to slice out millions of dollars in items she deemed unnecessary. [Arizona Republic, Apr. 12] Arizona Gov. Jan Brewer on Friday signed a $9.2billion budget passed by lawmakers this week, but she wielded her line-item veto power to slice out about $4.7million in spending that she deemed unnecessary. Explaining several of her vetoes, Brewer said the money would be better spent overhauling the state's child-welfare system, which has been swamped by reports of child abuse and neglect to the point that thousands of cases had not been investigated. In her signing statement, Brewer called the fiscal 2015 budget "balanced, principled and fiscally prudent." "This budget keeps us on the path to restoring the state to a structurally balanced budget by 2016 and protects the 'rainy-day fund' while addressing critical priorities, like child protection, public safety and education," she said. But she also reiterated in letters to Senate President Andy Biggs and House Speaker Andy Tobin that her focus is on developing a new child-welfare agency.

Determining the Sustainability of Water, Agriculture in Arizona

[ASU News, Apr. 9] Central Arizona has a rich history of agriculture, contributing $9.2 billion toward the state's economy. That water has near-absolute power in determining the region's fate is not an over-reaching assumption. With increasing urban development and an uncertain climate, is this industry doomed or can it be sustained? Researchers at Arizona State University have been studying the issue, talking to farmers about how to keep their industry on a sustainable path. They argue that a mutually inclusive and ongoing conversation among the agricultural community, urban residents, water agencies and policymakers is necessary if the region would like to maintain an agrarian footprint in the future. The research, supported by the National Oceanic and Atmospheric Administration and the National Science Foundation, is one of few that have examined the vulnerability of irrigated agriculture to uncertain climate and unrelenting urban development, according to lead researchers Hallie Eakin, associate professor in ASU's School of Sustainability, and Abigail York, associate professor in the School of Human Evolution and Social Change. Population growth in central Arizona has

10:00 p.m. MST
Register for this webinar.
Webinar Sponsor: EERE's Fuel Cell Technologies Office

Climate Change Impacts & Indian Country: Natural Resources & Agriculture Webinar
Thursday, April 24,10:00 a.m. - 12:00 p.m. MST
Click here to register.
Webinar Sponsors: White House Office of Public Engagement, White House Council on Environmental Quality, and DOE's Office of Indian Energy

Climate Change Impacts & Indian Country: Human Health & Community Webinar
Thursday, May 1, 10:00 a.m. - 12:00 p.m. MST.
Click here to register.
Webinar Sponsors: White House Office of Public Engagement, White House Council on Environmental Quality, and DOE's Office of Indian Energy

The 2014 Farm Bill's Renewable Energy for America Program
Wednesday, May 21, 3:00 p.m. - 4:00 p.m. Eastern Daylight Time.
Learn how to join the webinar.
Webinar Sponsor: Wind Program Stakeholder Engagement & Outreach Initiative

ENERGY STAR Webinars

U.S. Dept. of Energy Tribal Renewable Energy Webinar Series for 2014

forced researchers, water resource managers and policymakers to turn their critical eye to the distribution of the region's finite water supply. More often than not, the spotlight is focused on water used by agriculture.

District Brings Solar, Wind Energy Topics to Classes

[Havasu News, Apr. 6] With rising electricity costs today, schools are turning to alternative energy to hold down costs. And students are finding the subject being used as an added topic in the science and math curriculum. Recently, for example, the Lake Havasu Unified School District has gone to solar alternative energy to save electricity costs, installing panels at the district office and high school. "I am very pleased we are using solar energy," said district Superintendent Gail Malay. "We must find alternative, renewal energy sources." As early as 2008, Missy Wood, district director of business services, started looking for a way to bring solar power to the district without spending any money beyond what was already being spent. In 2013, the project was completed. The district said the total project cost $1.5 million and will be repaid with interest over 15 years. Money saved on electric bills will be used to pay for the project. And better, when electricity rates rise, the district won't see rate increases. Malay also saw it as an opportunity to teach children about solar alternatives. Thunderbolt Middle School science teacher John Hall and math teacher Lindsay Bitterman have added solar and wind energy to the curriculum there.

Feds OK Buyout of Tucson Electric Parent

[Arizona Daily Star, Apr. 2] The planned acquisition of Tucson-based UNS Energy Corp. by a Canadian utility company advanced with the approval of federal energy regulators. The Federal Energy Regulatory Commission issued a decision Wednesday approving the acquisition of UNS Energy — parent of Tucson Electric Power Co.— by a subsidiary of Fortis Inc. as "consistent with the public interest." UNS Energy shareholders approved the acquisition last week. The deal is still subject to the approval of the Arizona Corporation Commission, which is set to start formal hearings on the deal in June.

Governor Brewer Signs Tax Reform Legislation to Attract Business, Bolster Economic Competitiveness

SB1413 provides energy tax savings for Arizona manufacturing
[Arizona Governor's Office website, Apr. 11] PHOENIX – In keeping with her ongoing mission to make Arizona the most pro-business state in the nation, Governor Brewer signed into law SB 1413, which eliminates the state's Transaction Privilege Tax (sales tax) on energy sold to manufacturers. This significant tax reform measure will help attract manufacturers to the state and advance Arizona's global competitive edge. The governor made passing this legislation a cornerstone priority her 2014 State of the State address in January.

Pima County May Seek $12 for Environmental Damages for Kinder Morgan to Build Pipeline

[Arizona Daily Star, Apr. 8] Pima County wants Kinder Morgan to pay for potential long-term damage to the environment caused by the 60-mile natural gas pipeline it wants to build from Tucson to Sasabe. County Administrator Chuck Huckelberry will ask the Board of Supervisors at today's meeting to approve a resolution to ask Kinder Morgan for about $12 million for the Sierrita pipeline. The costs would include $7 million for a mitigation fund, as well as money for law enforcement, destroyed habitat area and annual costs. County officials, along with ranchers in the Altar Valley, oppose the proposed pipeline, saying it'll further damage pristine land in the area while potentially creating a new smuggling corridor. Officials and ranchers say they don't believe Kinder Morgan's plan to replant native vegetation along the pipeline will be adequate to mitigate the damage. "These are real impacts," Huckelberry said. "It doesn't grow back like they say it grows back." The pipeline could also hurt county taxpayers, who could pay $16 million in the first year for increased Pima County Sheriff's Department patrols, access-road maintenance, open-space management and other costs, according to county officials.

TEP Reducing Coal Generation, Increasing Renewables

[Fierce Energy, Apr. 9] According to its recently filed 2014 Integrated Resource Plan (IRP), Tucson Electric Power (TEP) will meet customers' energy needs through 2028 by reducing its coal generation capacity by one-third; acquiring new cost-effective natural gas-fired resources; and continuing its expansion of renewable power and energy efficiency programs. The IRP has been filed with the Arizona Corporation Commission. The company expects to add more than 50,000 customers over the next 10 years based on current projections. Peak demand is projected to grow annually by about 1 to 1.5 percent. To meet this demand requires a long-term portfolio diversification strategy that will reduce the company's overall coal capacity by 492 MW, or about 32 percent, over the next five years.

Vermaland Offers Sites in Eloy, Gila Bend to Tesla

[Arizona Republic, Apr. 8] Arizona landowner Vermaland has offered Tesla Motors Inc. a free 1,000-acre site in Eloy to build its $4 billion battery factory. Vermaland CEO Kuldip Verma told *The Arizona Republic* Tuesday afternoon he had contacted the Greater Phoenix Economic Council in late February offering the site Pinal County at no charge. He said he also offered a 666-acre site in Gila Bend at a "greatly discounted rate." "Then GPEC told us Tesla was already far along in its Arizona site selection, so we contacted Tesla directly in early March and offered the two sites," Verma said. "We feel the (Tesla) project will be monumental to accelerating the growth of Phoenix and all the economic development groups and businesses should do everything they can to ensure the project moves to Phoenix." Palo Alto, Calif.-based Tesla announced in February that Arizona was among four states in contention for a $4 billion factory that could employ 6,500 people, although few details of the selection process have been revealed. The factory could supply as many as 500,000 batteries a year, which could be shipped to California to be assembled into Tesla's electric vehicles. GPEC declined to comment on the Vermaland offer because of a confidentially agreement it signed with Tesla. Vermaland owns 25,000 acres of land across Arizona. Pinal County is clearly in the running for Tesla's planned battery factory, Pinal county officials and business leaders say. They cite the confluence of Union Pacific's transcontinental railroad and Interstates 10 and 8 as major advantages.

ALTERNATIVE ENERGY & EFFICIENCY

Developer Completes First Solar Farm on U.S. Superfund Site

[EL&P, Apr. 10] Hanwha Q CELLS, an international solar developer, manufacturer and solutions provider, commemorated the historic completion of the first utility scale solar project constructed on an active EPA Superfund site. Hanwha Q CELLS was joined by project partners including the Environmental Protection Agency (EPA), Vertellus Specialties Inc., Indiana Department of Environmental Management, Indiana Power & Light (NYSE: AES), PNC Bank, August Mack Environmental Consulting, URS Corp., U.S. Utility and Solar FlexRack. The 10.86 MWdc Maywood Solar Farm, located on 43 acres of the Reilly Tar & Chemical Superfund site in Indianapolis, was completed under the 2012 Indianapolis Power & Light Rate-REP program. The Maywood Solar Farm was fully realized without additional federal, state, local or corporate incentives and used conventional solar project financing. Construction commenced in July 2013 and was completed in March 2014, using high efficiency Q CELLS Q.PRO L polycrystalline modules, engineered by Hanwha Q CELLS in Germany. The Maywood Solar Farm will operate for up to 30 years and reduce CO_2 emissions by more than 13,000 metric tons per year – equal to the annual carbon emissions of more than 2,700 passenger cars or 1,800 Indiana residential homes.

Dual Turning Point for Biofuels

[New York Times, Apr. 14] HUGOTON, Kan. — There is an old joke in the energy business that advanced biofuels are the fuel of the future, and always will be.
A Spanish company, Abengoa Bioenergy, has bet $500 million on robbing that joke of its

punch line. In the middle of a cornfield here it is building a 38-acre Erector set of electrical cable and pipe that will soon begin producing cellulosic ethanol, which it calls a low-polluting alternative to petroleum products. This is just as the George W. Bush administration and Congress intended seven years ago with legislation promoting energy independence. But even as Abengoa and other companies prepare to produce significant amounts of cellulosic ethanol, using corn stalks and wheat straw as opposed to corn itself, the appetite for such fuels seems to be diminishing. The market is saturated with ethanol from corn. The automobile and oil industries are resisting efforts to increase the amount of ethanol blended into gasoline. And now the Environmental Protection Agency is considering reducing the amount of advanced biofuels required for blending into vehicle fuels this year by more than 40 percent below the original target in the Energy Independence and Security Act of 2007. A final decision is due in June. It's very frustrating," said Christopher Standlee, executive vice president of Abengoa. "The whole purpose of the Renewable Fuel Standard was to encourage investment to create brand-new technologies that would help the United States become more energy-independent and use cleaner and more efficient fuels. We feel like we are just on the verge of doing that and now the E.P.A. is talking about changing the rules." Other things have changed, too, since 2007. A boom in shale drilling has produced a sudden gush of domestic oil. Increasingly efficient cars and a sluggish economy have cut demand for fuel. (In recent weeks, ethanol prices spiked because of transportation problems in the Midwest. Gas stations in several states ran out of gasoline because there was not enough ethanol to blend, but the problem is considered temporary.) And there is disagreement about the potential for biofuels. Several companies have failed to develop commercial biofuels or have given up trying. The energy act's goal of reaching 21 billion gallons of advanced biofuels by 2022 is now considered virtually unreachable, even by biofuel enthusiasts. "It would take an enormous effort of deploying capital and labor and engineering," said Paul Winters, a spokesman for the Biotechnology Industry Organization.

Energy-Producing Honda Smart Home Gives More Than It Takes

[GizMag.com, Apr. 1] With homes and light-vehicles accounting for roughly 44 percent of total greenhouse gases emitted in the US, neutralizing these emissions would certainly go a long way towards a clean energy future. What if these sources of pollution could not only be nullified, but play an active role in reducing our environmental footprint? Such is the thinking behind the Honda Smart Home US unveiled last week, which generates enough solar energy to power both car and home, with a little left over to feed back into the grid. Constructed on campus at the University of California (UC), Davis, the Honda Smart Home US follows in the footsteps of the Honda Smart Home System, which the company demonstrated in Japan in 2012. But in addition to outlining an off-grid living solution, its latest effort hones in on the potential of smart connectivity between the home and main grid to impact overall energy reliability. The Honda Smart Home US is driven by the company's home energy management system (HEMS). This proprietary system, the brains of the operation, is housed in the garage to monitor and optimize electrical consumption across the home's micro-grid.

Ikea Is Investing in First Wind Farm in U.S.

[LA Times, Apr. 10] Swedish home goods giant Ikea Group is investing in its first wind farm in the U.S., joining a parade of other companies that are venturing into the renewable energy sector. The company purchased Hoopeston Wind, an energy project under construction in Illinois. The wind farm is expected to be up and running by the first half of 2015. Apex Clean Energy, a green power company in Charlottesville, Va., is building and running the project. Steve Howard, chief sustainability offer at Ikea, said the investment will be good for the company's business and the nation's energy independence. "The U.S has amazing wind and sun resources that will never run out," he said in a statement Thursday. The wind farm will eventually produce enough energy to power 34,000 average U.S. homes or 18% of all the electricity used by the company around the world, Ikea said.

NREL, US Navy Reduce Plug Loads

[Energy Manager Today, Apr. 7] In partnership with the Energy Department's National Renewable Energy Laboratory (NREL), the Naval Facilities Engineering Command (NAVFAC) recently demonstrated eight energy efficiency technologies at installations in Hawaii and Guam. In one instance, NREL identified advanced plug load controls as a good investment for the Navy. Advanced power strips, a plug load control technology that cuts power to devices plugged into electrical outlets when they are not in use, were installed in 30 residences and an office building with capacity for roughly 100 staff. While plug load savings depend on what can be turned off and for how long, the demonstration identified measurable savings. In the office setting, the elimination of unnecessary nighttime and weekend plug loads reduced overall plug load use by 28 percent and lowered the entire building's energy consumption by 8 percent, saving the Navy 15 MWh per year. Given the small investment required, this office application will pay for itself in less than two years.

States Save Big with Energy Efficiency Targets

[EL&P, Apr. 10] Energy efficiency targets implemented in half of U.S. states in 2012 saved enough electricity to power 2 million homes for a year. These are the findings of Energy Efficiency Resource Standards: A New Progress Report on State Experience, a new report released April 9, 2014, by the American Council for an Energy-Efficient Economy, based on the most recently available data. The report also finds that most states met or exceeded their targets and that these targets are making substantial contributions to national energy savings. "Energy efficiency is a cost effective and reliable resource that deserves to be a significant part of every state's energy portfolio," said Annie Downs, ACEEE state policy research analyst and lead author of the report. "Setting energy efficiency targets is smart policy that encourages utilities to help their customers save energy through efficiency programs, instead of spending even more money building unnecessary new power plants." Texas was the first state to set efficiency targets, also called an energy efficiency resource standard (EERS), in 1999. Since then, half of the states in the country have followed suit, setting long term targets designed to spur electricity and natural gas savings. Prompted by EERS policies, utilities in these states have invested in energy efficiency programs ranging from appliance rebates to whole-building retrofits. In Arkansas, utilities worked with customers to replace water heaters, weatherize homes and find energy savings for poultry producers. In Wisconsin, Focus on Energy programs have helped residents and businesses achieve more than $730 million in savings by replacing refrigerators, offering incentives for energy-efficient heating, and conducting free energy assessments for small businesses. Despite a landscape of EERS policies that are providing cost-effective energy savings in all the states profiled in the report, energy efficiency programs have yet to be embraced everywhere, and some are encountering resistance from opponents. In Indiana, legislators recently passed a bill which terminated energy efficiency programs that had been established by a prior regulatory commission order, eliminating the state's EERS.

ENERGY/GENERAL

Americans Using More Energy According to Lawrence Livermore Analysis

[Lawrence Livermore National Lab, Apr. 1] Americans used more renewable, fossil and even nuclear energy in 2013, according to the most recent energy flow charts released by Lawrence Livermore National Laboratory. Each year, the Laboratory releases energy flow charts that illustrate the nation's consumption and use of energy. Overall, Americans used 2.3 quadrillion thermal units more in 2013 than the previous year. The Laboratory also has released a companion chart illustrating the nation's energy-related carbon dioxide emissions. Americans' carbon dioxide emissions increased to 5,390 million metric tons, the first annual increase since 2010.

Clean Coal: Carbon Capture Pilot Begins at Polk IGCC Plant

[Power Engineering, Apr. 14] The U.S. Department of Energy and Tampa Electric Company (TECO) (NYSE: TE) came together this week to celebrate the successful

startup of a pilot project to demonstrate a warm gas cleanup carbon capture technology in a coal gasification unit at the Polk Power Plant Unit-1 in Tampa, Florida. The project, which is approximately $3 million under budget, included $168 million American Recovery and Reinvestment Act funding. “Fossil Fuels will be a major part of America’s energy supply for decades to come, and today’s demonstration is a major step forward in the effort to develop and deploy our coal resources in the cleanest way possible,” said Dr. Julio Friedmann, DOE’s Deputy Assistant Secretary for Clean Coal, who spoke at the event. “This partnership between the Department and Tampa Electric represents our commitment to fostering the next generation of carbon capture technologies that drive down costs, increase efficiency, and help ensure a sustainable future for America’s energy supply.” The Department has a long history of collaboration with TECO at the Polk Power Station, starting more than 20 years ago when DOE helped fund construction of the plant – the first coal integrated gasification combined cycle (IGCC) plant in the U.S., and one of the first in the world.

Germany Salvages Companies' Power Discounts

[Associated Press, Apr. 8] BERLIN — Germany says it will change its rules on energy discounts for companies that use large amounts of electricity to satisfy the European Union's executive Commission. The changes will allow companies to continue receiving a discount on a surcharge used to promote renewable energy and help Germany wean itself off nuclear power. The Commission in December started investigating whether the discounts violate EU rules on state aid. On Tuesday, Economy and Energy Minister Sigmar Gabriel said Germany has now completed talks with Brussels and is certain that adjustments to the system will mean it complies with EU rules.

NASEO Finalizes State Energy Planning Guidelines

[NASAEO website, Apr. 8] The final version of NASEO’s State Energy Planning Guidelines is now available. The Guidelines outline a process and broadly applicable policies and programs for states that are developing or updating their state energy plans. States’ comprehensive and strategic energy plans provide a framework for meeting energy, economic, and environmental goals.

Three U.S. States Want to Expand the Use Of Nuclear Power

[Power Engineering, Apr. 11] Lawmakers in three states have passed bills to expand the use of nuclear energy. Virginia’s governor signed a bill that will allow the state’s utilities to add 70 percent of nuclear and offshore wind preconstruction costs over the past six years to their expenses for 2013 and 2014, according to the Nuclear Energy Institute (NEI). The bill will allow Dominion (NYSE: D) to charge about $300 million in research and development costs for a potential third reactor at its North Anna nuclear plant against its profits over the two fiscal years. Washington lawmakers passed a budget revision to include funds for an eight-member Senate-House joint task force to study the costs and environmental benefits of nuclear in order to replace fossil-fueled electricity, NEI said. The lifecycle costs will include storage and disposal of any nuclear wastes. The state currently has one operating commercial nuclear plant, the Columbia Generating Station. The New Mexico House of Representatives passed a resolution for the state Energy, Minerals and Natural Resources Department to assess the feasibility of small modular reactors in the state. The assessment would be due in December, the article said. The resolution also requests the department to examine the legal and regulatory requirements to build and operate an SMR in the state and include a strategy to attract a nuclear supply chain.

INDUSTRIES AND TECHNOLOGIES

Energy Department Invests More Than $3 Million to Advance U.S. Competitiveness in the Fuel Cell Market

[Energy.gov, Apr. 8] In support of President Obama's all-of-the-above energy strategy, the Energy Department today awarded more than $3 million to Connecticut-based FuelCell Energy for a project that could increase U.S. competitiveness in the fuel cell

market and give businesses more affordable, cleaner power options. This project will enhance the performance, increase the lifespan, and decrease the cost of stationary fuel cells being used for distributed generation and combined heat and power applications. With support from the Energy Department, the private sector and the department's national laboratories have significantly reduced costs and improved performance in fuel cell and hydrogen technologies. Building on this progress, the project awarded today will focus on developing an innovative carbonate fuel cell electrolyte matrix, which promises enhanced cell output and the doubling of service life, which will reduce the costs and enhance the market for efficient, clean fuel cell power. In addition, the project will look for more opportunities to reduce costs through greater production by incorporating manufacturing process improvements.

Renewable Energy Investment Is Down—and That's OK

Funding for solar, wind and other forms of clean power fell 14% in 2013, largely because it's now cheaper to adapt to the newer technologies, but that doesn't mean the shift to renewable energy has fully stopped. On the surface, the new numbers on the global renewable energy industry in 2013 do not look good for the planet. Investment in renewable energy fell 14% in 2013 to $214.4 billion, according to a new report from the Frankfurt School-UNEP Collaborating Centre for Climate and Sustainable Energy Finance, the United Nations Environment Programme (UNEP) and Bloomberg New Energy Finance. And that comes after a year when renewable energy investment was already falling—it's now down 23% from the record investment levels seen in 2011. Given that recent reports from the Intergovernmental Panel on Climate Change (IPCC) underscore the desperate need to increase the shift from fossil fuel to low-carbon power sources like solar or nuclear, the two-year investment decline is not good news. But looking at the numbers more closely tells a brighter story. It's true that investment in renewable energy has been falling, but that's chiefly due to the rapidly falling cost of solar photovoltaic systems, according to Michael Liebreich of Bloomberg New Energy Finance. The average price of installing a solar panel has dropped by 60% in the U.S., which means that less money can buy more solar power. Globally, renewable energy aside from large hydro plants accounted for 43.6% of all new power capacity added last year—the same as in 2012—which translated to 81 gigawatts. That raised renewable energy's share of total power generation from 7.8% to 8.5%.

Utility Spending on Smart Grid IT Systems Will Total Nearly $140 Billion from 2014 through 2022

[T&D World Magazine, Apr. 10] Utilities have long used information technology (IT) solutions in their businesses – for customer billing, for outage responses, and for protection and control functions. Only recently, however, has the industry recognized the critical role that IT will play as the one-way network of old evolves into a far more complex system – i.e., the smart grid. According to a recent report from Navigant Research, cumulative utility spending on IT systems for the smart grid will total $139.3 billion from 2014 through 2022. "A dizzying array of solutions has emerged to meet utilities' IT needs for the smart grid," says Richelle Elberg, senior research analyst with Navigant Research. "This is a period of rapid change, and the difficulties associated with legacy system replacement and new system integration are not minor – but the potential benefits are real and increasingly measurable in terms of grid efficiency, reliability, and financial viability." To meet utilities' needs and to ease this transition, IT vendors are working to develop solutions that are more interoperable, according to the report, as well as creative purchasing models, such as managed services. At the same time, legacy utility IT systems were not designed to handle the volume or the speeds of data generated by the smart grid – so new hardware may be needed, in addition to software systems, to maximize the value of information gathered by grid devices. Increasingly, utilities are looking to outsourced data centers to meet these needs.

U.S. Solar Industry Has Record-Shattering Year in 2013

[Power Engineering, Apr. 14] What would Alexandre Edmond Becquerel be thinking now? In 1839 at the age of just 19, Becquerel built the world's first photovoltaic panel,

later inspiring the imaginations of millions of people worldwide, including legendary scientist Albert Einstein. Still, it took another 115 years before Bell Labs invented the first modern silicon solar cell. It's no stretch to say that recently, the solar timeline has rocketed forward at warp speed. Continuing its explosive growth, the U.S. solar industry had another record-shattering year in 2013. According to GTM Research and the Solar Energy Industries Association's Solar Market Insight Year in Review 2013, photovoltaic installations expanded rapidly last year, increasing 41 percent over 2012 to reach 4,751 MW of new capacity. In addition, 410 MW of concentrating solar power came online in 2013. Consumers nationwide benefitted from this growth as the cost to install solar fell throughout the year, ending 15 percent below the record low set at the end of 2012. When the final 2013 numbers were added up, there were 440,000 operating solar electric systems across the United States, totaling more than 12,000 MW of PV and 918 MW of CSP.

U.S. Wind Industry Slammed by Tax Uncertainty, Fracking

Wind now provides at least 15% of electricity in six U.S. states, but its growth nosedived last year.

[USA TODAY, Apr. 10] Once a booming industry, U.S. wind power saw its growth plummet 92% last year as it wrestled with tax uncertainties and cheap natural gas. The industry is still growing but not nearly as fast, says a report Thursday by the American Wind Energy Association. It added a record 13,131 megawatts of power in 2012 but that fell to only 1,087 MW last year — the lowest level since 2004. One reason was investors' uncertainty that Congress would renew a federal wind tax subsidy. "People didn't know it would be passed ... so they weren't creating new projects" early last year, says AWEA's president Tom Kiernan. He says it takes about nine months to plan a wind farm, so the one-year extension in January 2013 didn't trigger a flurry of new wind farm construction until the second half of 2013. He expects this year will see a rebound in new capacity but how much will depend on whether Congress extends the tax subsidy, which expired in January. An extension is pending in the Senate. Retailer IKEA announced Thursday that it's building a wind farm in Hoopeston, Ill., slated to open in early 2015. The AWEA report is the latest to show the challenges confronting the clean energy sector. Last year, investments in renewable energy fell 14% globally and 10% in the United States, according to an analysis Monday by the United Nations Environment Programme. It says U.S. investments in wind were $13.3 billion, down from $14.5 billion in 2012. The UNEP attributes the declines to policy uncertainty, including the expired U.S. wind subsidy, and falling technology costs, notably solar panels and wind turbines. Yet for the U.S., it saw another factor at play as well.

LEGISLATION AND REGULATION

120 Congressional Members Exhibit Strong Support for SEP and WAP

[NASEO, Apr. 7] Forty Senators and Eighty House members recently signed on to letters in support of State Energy Program (SEP) and Weatherization Assistance Program (WAP) funding for fiscal year 2015. Members urged the House and Senate Appropriations energy subcommittee chairs for funding levels of $63 million for SEP and $230 million for WAP. The letters highlighted the energy, economic, and environmental benefits of these programs.

EPA Coal Rules Leaving US Vulnerable to Power Blackouts?

[FoxNews.com, Apr. 12] Facing the Obama administration's so-called "war on coal," some utility officials are warning that fewer coal-fired power plants could leave the U.S. power system vulnerable to blackouts in the near future. The officials warn that intense summer heat or extreme winter cold could soon be too much for the system to handle. "I worry about the potential of brownouts and blackouts if we're ... actually depending on this generation that's going to be retired," Nick Akins, from American Electric Power, told Fox News in an interview. Pro-coal advocates say the administration's focus on its environmental agenda challenges the reliability of the nation's power grid. "Regulation from five years ago is closing about 20 percent of the coal plants. Regulations being

proposed now could close an additional 20 percent of coal plants. And that creates huge stresses -- we're just not ready for anything like that in this country," Mike Duncan, from the American Coalition for Clean Coal Electricity, told Fox News. However, the EPA says government studies indicate there will be more than enough electricity-generating capacity to meet the nation's needs. Asked about future regulations, EPA Administrator Gina McCarthy suggested the agency is trying to be careful.

New Resources Available for Farm Bill Energy Programs

[NASEO, Apr. 8]The Environmental Law & Policy Center (ELPC) has developed a variety of resources to help better understand the rural clean energy development opportunities available in the new Farm Bill's Energy Title. After three years of deliberation, the new Farm Bill – the Agricultural Act of 2014 – is now law. This Farm Bill includes the third Energy Title, building upon the Energy Titles in the 2002 and 2008 Farm Bills. The Energy Title provides total mandatory funding of $694 million over five years (2014 – 2018), which compares to $1.12 billion over four years in the 2008 Farm Bill and $800 million over five years in the 2002 Farm Bill. The Congressional Budget Office estimates that the outlays for the Energy Title over 10 years will be $880 million. The 2014 Farm Bill thus reduces the scope of programs and amount of funding compared to the 2008 Farm Bill, but some funds have been re-allocated in favorable ways. For example, the important and successful Rural Energy for America Program is now the top-funded program.

Regulators: No Interruption After Utilities Hacked

[Associated Press, Apr. 14] Hartford, CT - Electric, natural gas and major water companies and regional distribution systems in Connecticut have been penetrated by hackers and other cyber attackers, but defenses have prevented interruption, state utility regulators said Monday in their first report on cyber security. Security challenges are constantly evolving and "becoming more sophisticated and nefarious" and the ability of utilities to detect and stop penetration must constantly improve, the Public Utilities Regulatory Authority said in its report to Gov. Dannel P. Malloy. The report, required as part of legislation enacted last year, said the region's Massachusetts-based grid operator, ISO-New England, has "more sophisticated" cyber defenses than utilities do.

U.S. Gas Tantalizes Europe, But It’s Not a Quick Fix

[New York Time, Apr.7] HOUSTON — As congressional pressure builds on the Obama administration to quicken gas exports to Europe to reduce its dependence on Russia, it may be tempting to gaze upon a marshy, alligator-infested Louisiana inlet of the Gulf of Mexico. There 3,000 workers are installing a huge set of turbines, pipelines and refrigeration units, building a terminal that will send American natural gas around the world by the end of next year. By 2017, the facility built by Houston-based Cheniere Energy could handle roughly a sixth the amount of gas that flows from Russia to Europe every day. The Cheniere plant will be part of a new surge of liquefied natural gas supplies coming from not only the United States but also Australia, Africa and the Middle East. That surge, perhaps along with increased production in Europe itself, promises to keep the Continent flush with non-Russian natural gas at the end of the decade. But for the short term, the United States can offer little hope for Europeans eager to diversify their gas sources as Russia occupies Crimea and may threaten other parts of eastern Ukraine. For all the discussion in Washington about gas exports to Europe, the Cheniere plant is the only terminal among the dozens proposed to have completed the maze of regulatory approvals to export liquefied natural gas, better known as L.N.G. And half of the gas that will leave Cheniere’s facility has already been contracted by India and South Korea. The other half will go to British and Spanish companies that can sell the gas wherever they find the highest price.

WESTERN POWER

Digging Up Old Drilling Logs To Strike Not Oil, But Water

[New York Times, Apr. 10] Daniel Ortuño pulled a small piece of Texas history from a

shelf in a building at the University of Texas at Austin. The yellowing piece of paper said that on Dec. 19, 1951, John L. Boyd began drilling a 1,350-foot-deep oil well through 17 layers of shale and limestone in Crockett County in southwest Texas. Strolling amid the vast library of oil and gas drilling logs, Mr. Ortuño, the collection's manager for 35 years, plucked another sheet, dated 1938, from a drawer. "Dry and abandoned," the sheet said of the well. Few people outside of the oil and gas world care about such records, which fill a corner of the university's Bureau of Economic Geology building that Mr. Ortuño calls his "kingdom." But those looking to shore up the state's water supplies are deeply interested. As drought grips most of Texas, researchers are combing the records to map brackish groundwater in the state's 30 aquifers — hidden resources that could help quench the state's long-term thirst. (The University of Texas at Austin is a corporate sponsor of The Texas Tribune.) Hundreds of quadrillions of gallons of brackish water are thought to lie in the cracks, pores and fault lines below the surface. Though the water contains too much salt and other dissolved solids to be drinkable, many parched towns are interested in making the water usable through expensive desalination technology. Lawmakers grappling with how to bolster and regulate the supplies face a more immediate hurdle: No one is sure where all the water sits, or how salty it is.

ERCOT Doubling Down on Wind

[Fierce Energy, Apr. 8] The Electric Reliability Council of Texas (ERCOT) has set a new record on the main Texas grid, reaching more than 10,000 MW of wind -- the most ever for a U.S. power system, and the equivalent of powering more than five million average homes. Texas is the national leader in wind energy, in part, because it has created policies that enable private sector investment in, and open access to, an expanded transmission grid. Texas' recent wind records were made possible by the completion of the Competitive Renewable Energy Zone (CREZ) transmission lines earlier this year, which connect world class wind energy resource areas in West Texas and the Texas Panhandle to electricity demand centers. The lines are allowing ERCOT to nearly double its use of wind energy.

ARIZONA STATE INCENTIVES/POLICIES

ARIZONA COMMERCE AUTHORITY (ACA)

INCENTIVES

Arizona has lowered taxes, streamlined regulations, and established a suite of incentives to support corporate growth and expansion. The Arizona Competitiveness Package, groundbreaking legislation adopted in 2011, makes it easier for existing Arizona companies to prosper and establishes Arizona as one of the most desirable places for expanding companies to do business. Give your company a competitive edge by utilizing Arizona's incentives.

- Job Training
- Quality Jobs
- Qualified Facility
- Computer Data Center Program
- Research & Development
- Foreign Trade Zone
- Military Reuse Zone
- Angel Investment
- Renewable Energy Tax Incentive
- Healthy Forest
- Sales Tax Exemption for Machinery and Equipment
- Lease Excise

- Additional Depreciation
- Work Opportunity
- Commercial/Industrial Solar
- SBIR/STTR
- Private Activity Bonds
- QECB's

(ACA) PROGRAMS

DATABASE OF STATE INCENTIVES FOR RENEWABLES & EFFICIENCY (DSIRE)

- Arizona Incentives/Policies
- Federal Incentives/Policies
- Solar Policy News - DSIRE provides summaries of current solar policy developments and an archive of past solar policy developments. Current solar news appears below the news archive, which is searchable by several criteria.

GRANTS

The following solicitations are now available:
(Click on title to view solicitation)

- Building Energy Efficiency Frontiers and Incubator Technologies (BENEFIT) 2014 Close Date: April 21, 2014
- Clean Energy Manufacturing Innovation Institute for Composites Materials and Structures Close Date: April 22, 2014
- Microgrid Research, Development & System Design Response Due: April 28, 2014
- Integrated Enhanced Geothermal Systems (EGS) Research and Development Close Date: April 30, 2014
- Low Temperature Geothermal Mineral Recovery Program Close Date: May 2, 2014
- Commercial Building Technology Demonstrations Concept Paper Submission Deadline: March 31, 2014. Full Application Submission Deadline: May 19, 2014.
- Bioenergy Technologies Incubator Close Date: May 23, 2014
- NEW! Clean Energy Manufacturing Innovation Institute for Composite Materials & Structures Close Date: June 19, 2014
- Sunshot "Race to the Roof" Initiative Registration Due: October 31, 2014
- NEW! Energy, Power, and Adaptive Systems Close Date: November 3, 2014
- NEW! Energy for Sustainability Response Due: February 19, 2015
- Advanced Fossil Energy Projects - Solicitation Number: DE-SOL-0006303

Expiration Date: November 30, 2016

- NEW! NSF/DOE Partnership on Advanced Frontiers in Renewable Hydrogen Fuel Production Via Solar Water Splitting Technologies 2014-2016 Close Date: Dec. 11, 2014

- Energy Department Announces Next Phase of L Prize Competition to Create Innovative Energy-Saving Lighting Products – Notification of Intent to Submit Product minimum of 30 days, but no more than 45 days prior to product submission. Monetary prize goes to the first successful entrant with the earliest timestamp.

- Repowering Assistance Program – Ongoing

- Rural Business Enterprise Grants – Ongoing

- Rural Business Opportunity Grants – Ongoing

- Sustainable Agriculture Research and Education Grants – Ongoing

- Renewable Energy RFP's - Solicitations for Renewable Energy Generation, Renewable Energy Certificates, and Green Power – Various Deadlines

- U.S. Dept. of Agriculture - Rural Development Grant Assistance

- Green Refinance Plus - Ongoing

ENERGY-RELATED EVENTS

2014

- International Geothermal Energy Forum
  April 23-24, 2014 Washington, DC

- 32nd Annual Solar Potluck & Exhibition
  April 26, 2014 Catalina State Park

- 11th Annual Construction in Indian Country Nat'l., Conference
  April 28-30, 2014 Chandler, AZ

- VerdeXchange Arizona
  April 30-May 2, 2014 Phoenix, AZ

- ASU School of Sustainability Open House & Student Project Showcase
  May 1, 2014 ASU Wrigley Hall – Tempe, AZ

- Windpower 2014
  May 5-8, 2015 Las Vegas, NV

- Cybersecurity Summit
  May 7, 2014 Scottsdale, AZ

- AWEA Windpower 2014
  May 5-8, 2014 Las Vegas, NV

- AZ Water Association Annual Conference & Exhibition
  May 7-9, 2014 Glendale, Arizona.

- Beyond the Border: Arizona Trade Mission to Mexico City & Guadalajara

May 12-16, 2014

- Sunshot Grand Challenge Summit 2014
  May 19-22, 2014 Anaheim, CA

- Dept. of Energy's 13th Annual Small Business Forum & Expo
  June 10-12, 2014 Tampa, FL

- Native American Economic Development & Energy Projects Conference
  June 16-17, 2014 Anaheim, CA

- AZBio Expo 2014
  June 19, 2014 Scottsdale, AZ

- 32nd Annual West Coast Energy Management Congress
  June 25-26, 2014 Seattle, WA

- Solar 2014: 43rd Annual Conference
  July 6-10, 2014 San Francisco, CA

- National Geothermal Summit
  August 5-6, 2014 Reno, NV

- 2014 ACEEE Summer Study on Energy Efficiency in Buildings
  August 17-22, 2014 Pacific Grove, CA

- EPI's 4th Annual Energy Policy Research Conference
  September 4-5, 2014 San Francisco, CA

- HTUF 2014 National Meeting - The Forum for Action in High-Efficiency Commercial Vehicles
  September 22-24, 2014 Argonne, National Lab Argonne, IL

- Geothermal Energy Expo
  September 28-October 1, 2014 Portland, OR

- Solar Power International
  Oct. 20-23, 2014 Las Vegas, NV

- GreenBuild International Conference & Expo
  October 22-24, 2014 New Orleans, LA

- Governor's Celebration of Innovation
  November 13, 2014

- ASU Sustainability Series Events

- Green Building Lecture Series
  Granite Reef Senior Center Scottsdale, AZ